
पुरुषों द्वारा खेल कूद के दौरान प्रयोग
होने वाली बुनी हुई (निटटेड)
सूती शर्ट/टी-शर्ट की विशिष्टि
(दूसरा पुनरीक्षण)

**Specification for Men's Cotton
Knitted Sports Shirt/T-Shirt**
(Second Revision)

ICS 61.020

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Hosiery Sectional Committee had been approved by the Textile Division Council.

This standard was originally published in 1967 and was subsequently revised in year 1975. This standard has been revised again on the basis of experience gained in its implementation. Following major changes have been incorporated in this revision:

- a) Title and scope has been modified.
- b) The constructional particular of the sport shirt/t-shirt fabric has been modified.
- c) Tolerance on the dimensions and dimensions of the sport shirts/t-shirt have been modified.
- d) Performance requirement for *pH* value of aqueous extract, colour fastness to light and rubbing has been modified.
- e) Requirement of fibre composition, pilling resistance and Spirality after laundering has been added.
- f) Sampling plan and criteria of conformity has been modified.
- g) Marking requirements has been modified.
- h) Additional requirement of ECO Mark (optional) has been incorporated.

The composition of the Committee responsible for the formulation of this standard is given in Annex C.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

SPECIFICATION FOR MEN'S COTTON KNITTED SPORTS SHIRT/T-SHIRT

(Second Revision)

1 SCOPE

1.1 This standard prescribes the requirements of three types of cotton plain or interlocks knitted sports shirts/t-shirt.

1.2 This standard does not specify the general appearance, lustre, feel and shade of the sports shirts/t-shirt (see also 6.4).

2 REFERENCES

The standards given in Annex A contain provisions which through, reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards.

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 3596 shall apply.

4 TYPES

The sports shirts/T-shirt shall be of any one of the following three types:

- a) *Type 1* — Shirt with collar and placket (see Fig. 1),
- b) *Type 2* — Shirt with T-neck (see Fig. 2), and
- c) *Type 3* — T-shirt with round neck (or bow-neck/V-neck) (see Fig. 3).

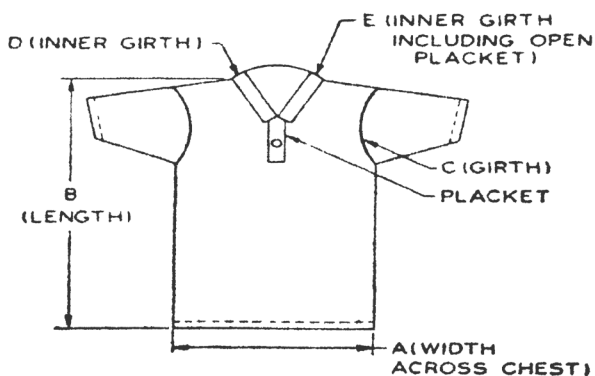


FIG. 1 TYPE 1

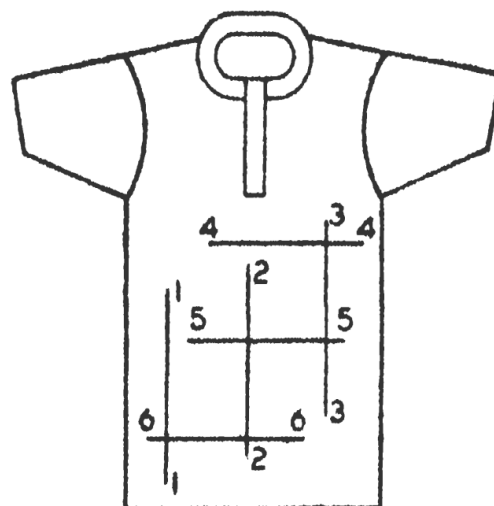


FIG. 2 TYPE 2

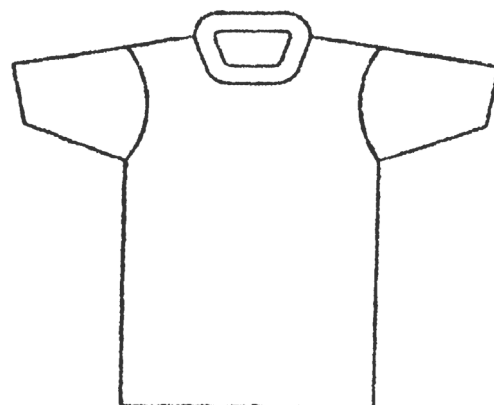


FIG. 3 TYPE 3

5 MANUFACTURE

5.1 Seams and Stitches

5.1.1 For stitching various portions of sports shirt/t-shirt, the type of stitches and count of sewing thread used shall be as given in Table 1. The sewing thread shall conform to IS 1720. In case of dyed/printed sports shirts/T-shirt the sewing thread should be of matching shade.

Table 1 Seams and Stitches

(Clause 5.1.1)

Portion to be Stitched (1)	Type of Stitch (2)	Thread in Needle(s) (3)	Thread in Looper(s) (4)
All the joining's to assemble different portions of sports shirts/t-shirt	3-thread overlook	One strand of 9.8 tex × 3 (cotton count 60s/3)	Two strands of 15 tex × 2 (cotton count 40s/2)
Placket seam	Lock stitch (single needle machine)	One strand of 9.8 tex × 3 (cotton count 60s/3)	Two strands of 15 tex × 2 (cotton count 40s/2)
Collar Rib	Overlock stitch along with lock stitch (single needle machine)	One strand of 9.8 tex × 3 (cotton count 60s/3)	Two strands of 15 tex × 2 (cotton count 40s/2)
Hemming at the bottom and sleeve cuffs	2-thread overlook or flat lock	One strand of 9.8 tex × 3 (cotton count 60s/3)	Two strands of 15 tex × 2 (cotton count 40s/2)

5.1.2 The number of stitches shall not be less than 4 stitches per cm.

5.2 Reinforcement

The seams at the shoulders of sports shirts/t-shirts shall be suitably reinforced.

5.3 Sports Shirts/T-shirt

If desired by the buyers, the sports shirts/t-shirts classified in 4 may be manufactured with half sleeves or full sleeves. The sports shirts/t-shirt may be with or without pockets.

5.3.1 The collar, welts at elbow ends of the sleeves or cuffs and at the bottom may be made from rib knitted fabrics, as desired by the buyer.

5.3.2 The dimensions of pocket(s), collar and number of buttons to be provided (for Type 1 and Type 2) and the length and width of placket shall be as agreed to between the buyers and the sellers. If desired by the buyers, slide fasteners or press buttons of good quality may be provided in place of buttons.

5.3.3 The hem or folding at bottom, sleeves and neck shall be evenly and securely stitched and the minimum dimensions shall be as agreed to between the buyers and the sellers.

5.3.4 The sports shirts/t-shirt may also be screen or transfer printed with motifs or design as desired by the buyers.

5.4 Freedom from Defects

The sports shirts/t-shirt should be free from manufacturing defects, such as mends, ladders, dropped stitches, improper reinforcement, missed stitches at the stitched parts, badly sewn and mispositioned buttons, malformed button holes, chemical damages and dyeing defects, such as streakiness and uneven dyeing.

6 REQUIREMENTS

6.1 Fabric

The sports shirts/t-shirt shall be tailored from evenly and well knitted plain knitted or interlock knitted fabric having the construction particulars given in Table 2 and Table 3 respectively. The fabric shall be bleached, dyed or printed to the required shade.

6.1.1 The GSM shall be determined by the method given in B-4 (see Annex B).

Table 2 Construction of Plain Knitted Fabrics

(Clause 6.1)

Gauge of* Machine	Approximate Count of Yarn - Cotton Count (tex)	gsm, Min
24 (Fine)	30s (19.5) to 40s (14.5)	120
26 (Super fine)	34s (17) to 50s (12.0)	120
28 (Extra super fine)	40s (14.5) to 50s (12.0)	120
30 (Extra super fine)	40s (14.5) to 50s (12.0)	120

* As determined by number of needles per 2.5 cm.

Table 3 Construction of Interlock Knitted Fabrics

(Clause 6.1)

Gauge of* Machine	Approximate Count of Yarn - Cotton Count (tex)	gsm, Min
20 (Fine)	30s (19.5) to 40s (14.5)	150
24 (Super fine)	34s (17) to 50s (12.0)	150
28 (Extra super fine)	40s (14.5) to 60s (9.8)	150

* As determined by number of needles per 2.5 cm.

6.2 Dimensions

The dimensions of sports shirts/t-shirt when measured by the method prescribed in **B-2** (see Annex B shall conform to the requirements of Table 4.

NOTE — Size of the sports shirt/T-shirt is denoted by a number which has numerical value of chest girth in centimetres.

Example : An 80 size sports shirt/T-shirt represents a shirt with chest girth of 80 cm.

6.3 Other Requirements

The sports shirt/t-shirt shall satisfy the other requirements as given in Table 5.

6.4 Sealed Sample

If in order to illustrate or specify the indeterminable characteristics, such as general appearance, lustre, feel and colour of sports shirt/t-shirt, a sample has been agreed upon and sealed, the supply shall be in conformity with the sample in such respects.

6.4.1 The custody of the sealed sample shall be a matter of prior agreement between the buyers and the sellers.

7 ADDITIONAL REQUIREMENT FOR ECO-MARK (OPTIONAL)

7.1 General Requirements

7.1.1 Cotton knitted sports shirt/t-shirt shall conform to the requirements of quality specified in this standard.

7.1.2 The manufacturers shall produce the consent clearance as per the provisions of *Water (Prevention and Control of Pollution) Act, 1974* and *Air (Prevention and Control of Pollution) Act, 1981*, *Water (Prevention and Control of Pollution) Cess Act, 1977*, respectively, along with the authorization, if required under *Environment (Protection) Act, 1986* and the rules made thereunder to the Bureau of Indian Standards while applying for ECO-Mark. Additionally, the manufacturer shall produce documentary evidence on compliance of the provisions related to noise level and occupational health under the provisions of *Factories Act, 1948* and rules made thereunder.

7.1.3 The product packaging may display in brief the criteria based on which the product has been labelled environment friendly.

Table 4 Dimensions of Sports Shirt/T-shirt

(Clause 6.2)

All dimensions in centimetres

Size	Width Across Chest	Length of Sports Shirt/T-shirt, Min	Girth of Arm Hole	Inner Girth of Neck Opening*	Inner Girth of Total Neck Opening Including Placket, Min*
(1)	(2)	(3)	(4)	(5)	(6)
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>
45	22.5	40	26	24.0	38.0
50	25.0	44	28	26.0	41.0
55	27.5	48	30	26.0	41.0
60	30.0	52	32	28.0	44.0
65	32.5	55	36	28.0	44.0
70	35.0	59	38	32.0	48.5
75	37.5	63	40	33.0	50.0
80	40.0	67	42	34.5	51.5
85	42.5	70	46	35.5	54.0
90	45.0	74	48	36.5	54.0
95	47.5	78	50	37.0	56.5
100	50.0	82	52	37.0	56.5
105	52.5	85	54	38.0	58.5
110	55.0	87	56	38.0	58.5
Tolerance (cm)	± 2.0	—	± 1.0	± 0.5	—

* These dimensions may be varied, if desired by the buyers; however, these shall be subject to the tolerances specified.

Table 5 Requirements of Sports Shirt/T-shirt

(Clause 6.3)

Sl No.	Characteristic	Requirement	Method of Test, Ref to IS/ Annex of this standard
(1)	(2)	(3)	(4)
i)	Dimensional change due to relaxation, percent, <i>Max</i> :		
	a) Wales	5	B-3
	b) Courses	5	B-3
ii)	pH value of aqueous extract (Cold method)	6.0 to 8.0	IS 1390
iii)	Colour fastness of dyed sport shirts/T-shirts to		
	a) Light (<i>see</i> Note)	4 or better	IS 2454 or IS 686
	b) Washing, Test C (3) :		
	1) Change in colour	4 or better	IS/ISO 105 - C10
	2) Staining on adjacent fabric	4 or better	
	c) Perspiration (Acidic and Alkaline) :		IS/ISO 105 E04
	1) Change in colour	4 or better	
	2) Staining on adjacent fabric	4 or better	
	d) Rubbing :		IS 766
	1) Dry	4 or better	
	2) Wet	3 or better	
iv)	Fibre Composition	Min. 95percent Cotton, up to 5 percent Elastane	IS 667/ ISO 1833-20
v)	Pilling Resistance Test (Upto 1000 rev)	3 or better	IS 10971 Part 2
vi)	Spirality after laundering (as per washcare instruction)	5percent (Max)	IS/ISO 16322-3
NOTE — In case of dispute colour fastness to light shall be determined by the method prescribed in IS 686			

7.1.4 The material used for product packaging shall be reusable or made from recyclable or biodegradable materials.

7.1.5 Fatty alcohol based non-ionics as emulsifier should be used wherever required.

7.1.6 Polyhalogenated based phenolic fire retardants shall not be used.

7.2 Specific Requirements

7.2.1 Cotton knitted sports shirt/t-shirt shall confirm to the requirements given in Table 6.

8 MARKING

8.1 A suitable cloth label made of woven cotton, taffeta/satin or fusing type shall be fastened or fused to each sport shirt/t-shirt at the inside of the neck portion on which the following shall be indicated by printing:

- Size and type of sports shirt/t-shirt;
- Type of fabric namely, plain or interlock;
- Indication of the source of manufacture;

d) Washing instructions, and

e) Any other information required by the buyer.

NOTE — The colour from the label shall not bleed on to the sport shirt/t-shirt during storage or use.

8.2 The sports shirt/t-shirt may also be marked with ECO-mark in addition to Standard Mark if the requirements specified in 7 are also satisfied with the Standard Mark.

For ECO-mark, following additional information may also be marked on the product.

The criteria for which the product has been labelled with ECO-mark.

8.3 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

Table 6 Specific Requirements for ECO-Mark

(Clause 7.2.1)

SI No.	Parameter*	Max, Limit, mg/kg (ppm)		Method of Test, Ref to
		Close to Skin Clothing	Outer Wear Fabrics	
(1)	(2)	(3)	(4)	(5)
i)	Free and releasable formaldehyde	75	300	IS 14563 (Part 1 and 2)
ii)	Extractable artificial sweat/salvia heavy metals mercury	0.1	0.1	IS 15651
iii)	Chromium III*	0.1	0.1	-
iv)	Chromium VI*	Nil (Below detectable limit)	Nil	-
v)	Sum parameters (as lead) *	10.0	10.0	-
vi)	Pentachlorophenol (PCP)	0.5 (Detectable limit using GC-MS)	0.5	IS 15651
vii)	Volatile hydrocarbons (non-halogens)*	150	150	-
viii)	Volatile halogenated Organics*	200	200	-
ix)	Pesticides (sum parameter)	1.0	1.0	IS 15651
x)	Banned pesticides	Nil (Below detectable limit)	Nil	IS 15651
xi)	pH of aqueous extract	4.0 -7.5	4.0 -7.5	IS 1390
xii)	Coupled amines released from azo-dyes (sum parameters)	50 (Detectable limit using GC-MS)	50	IS 15570

* The method of tests for Eco-parameters are being developed by the Textiles Committee of Bureau of Indian Standards. Till the methods of test are standardized, the manufacturer shall declare conformance taking into consideration the chemicals auxiliaries and dyes used.

9 PACKING

The sports shirt/t-shirt shall be packed in bales or cases in accordance with IS 3325 or IS 3086 as the case may be.

10 SAMPLING AND CRITERIA FOR CONFORMITY

10.1 The sampling procedure detailed in **10.2** to **10.3** shall give desired protection to the buyers and the sellers provided the lot submitted for inspection is homogeneous. To achieve this, the manufacturers shall maintain system of process control at all stages of manufacture ensuring that sports shirt/t-shirt tendered by him for inspection comply with the requirements of this standard in all respects.

NOTE — For effective process control, the use of statistical quality control technique is recommended and helpful guidance may be obtained in this respect from IS 397 (Part 1).

10.2 In any consignment all the sports shirt/t-shirt of the same size and manufactured from the same count and quality of yarn and delivered to a buyer against one despatch note shall constitute a lot.

10.2.1 The conformity of a lot to the requirements of this specification shall be determined on the basis of the tests carried out on the samples selected from the lot.

10.3 All the sports shirt/t-shirt selected as per column 3 of Table 7 shall be examined for visual inspection, dimension, freedom from defect, gsm etc. Any sports shirt/t-shirt failing in one or more of the above requirements shall be termed as defective. The lot shall be considered as conforming to the above requirements, if the total number of defectives found in the sample is less than or equal to the acceptance number given in column 4 of Table 7. Otherwise, the lot shall be rejected.

10.3.1 If the samples are found satisfactory according to **10.3**, samples will be drawn as per column 5 for physical testing, from the sample originally drawn as per column 3 of Table 7.

10.3.2 For chemical parameters sample to be drawn as per column 7 randomly from the samples as per column 5 of Table 7.

10.3.3 Acceptance number mentioned in the physical parameter (column 6) is inclusive of chemical parameter (column 8) that is, total acceptance number should not exceed acceptance number mentioned in column 6 of Table 7.

Table 7 Sample Size and Permissible Number of Non-Conforming Sport Shirts/T-shirt

(Clauses 10.3, 10.3.1, 10.3.2 and 10.3.3)

Sl No.	Lots Size in Nos	Visual Inspection, Dimension, Freedom from Defect, gsm etc. at the time of Sampling		Physical Parameters		Chemical Parameters	
		Sample size	Acceptance No.	Sample size	Acceptance No.	Sample size	Acceptance No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	Upto 280	13	1	13	1	5	0
ii)	281-500	20	2	13	1	5	0
iii)	501-1 200	32	3	20	2	5	0
iv)	1 201-3 200	50	5	32	3	8	1
v)	3 201-10 000	80	7	32	3	8	1

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No./Other Publication</i>	<i>Title</i>
105-C10 : 2006	Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda
105 – E 04 : 2008	Textiles — Tests for colour fastness: Part E04 Colour fastness to perspiration
397 (Part 1) : 2003	Methods for statistical quality control during production: Part 1 Control charts for variables (<i>second revision</i>)
667 : 1981	Methods for identification of textile fibres (<i>first revision</i>)
686 : 1985	Methods for determination of colour fastness of textile materials to daylight (<i>first revision</i>)
766 : 1988	Method for determination of colour fastness of textile materials to rubbing (<i>first revision</i>)
1390 : 1983	Methods for determination of pH value of aqueous extracts of textile materials (<i>first revision</i>)
1720 : 1978	Specification for cotton sewing threads (<i>second revision</i>)
2454 : 1985	Methods for determination of colour fastness of textile materials to artificial light (Xenon lamp) (<i>first revision</i>)
3086 : 1965	Code for seaworthy packaging of cotton hosiery yarn and goods
3325 : 1965	Code for inland packaging of cotton hosiery yarn and goods
3596 : 1967	Glovssary of terms relating to hosiery
6359 : 1971	Method for conditioning of textiles
10971 (Part 2)	Textiles — Determination of fabric propensity to surface fuzzing and to pilling: Part 2 Modified martindale method (<i>first revision</i>)
14563 (Part 1) : 1998	Textiles — Determination of formaldehyde: Part 1 Free formaldehyde
14563 (Part 2) : 1999	Textiles — Determination of formaldehyde: Part 2 Released formaldehyde
15570 : 2005	Textiles — Method of test — Detection of banned azo colorants in coloured textiles
15651 : 2006	Textiles — Requirements for environmental labelling — Specification
16322-3 : 2005	Textiles — Determination of spirality after laundering: Part 3 Woven and knitted garments
ISO 1833-20 : 2018	Textiles — Quantitative chemical analysis — Part 20: Mixtures of elastane with certain other fibres (method using dimethyl acetamide)

ANNEX B

(*Clauses 6.1.1 and 6.2*)

METHOD OF TEST

B-1 CONDITIONING OF TEST SPECIMENS AND ATMOSPHERIC CONDITIONS FOR TESTING

The test specimens shall be tested in prevailing atmosphere. In case of dispute, the samples shall be conditioned and tested in the standard atmosphere as given in IS 6359.

B-2 DIMENSIONS**B-2.1 Procedure**

Take a sports shirt/t-shirt. Lay it flat on a table. Remove all creases and wrinkles by hand without any distortion. Measure the dimensions to nearest 0.1 cm.

B-3 DIMENSIONAL CHANGES (DUE TO RELAXATION)**B-3.1 Marking of Test Specimens**

B-3.1.1 Take a sports shirt/t-shirt from the test sample. Cut a test specimen measuring 20 cm × 20 cm from it in such a way that the two of its sides are parallel in the direction of wale and the other two parallel in the direction of course. Mark the direction of wale and course in the test specimen.

B-3.1.2 Mark centrally on the test specimen, by means of indelible ink or a fast dyed cotton sewing thread, an area of 15 cm × 15 cm with two of its sides in the direction of wale and the other two in the direction of course. Spread this test specimen on a flat smooth surface, carefully remove all creases and wrinkles by hand. Within this area, mark six pairs of marks, three pairs each in the wale direction and the course direction in such a way that the distance between each pair of marks is the same.

B-3.2 Procedure

B-3.2.1 Place the test specimen on a glass plate and carefully remove all creases and wrinkles by hand without distorting it and place the other glass plate on the test specimen. Measure the distance between each pair of marks separately to the nearest millimeter.

B-3.2.2 Lay the test specimen flat in a tray of suitable size having minimum depth of 10 cm. Soak it under a head of 25 mm of water containing 0.5 percent suitable wetting agent at room temperature for 2 h. Drain out the water and remove the test specimen carefully so that

it is not stretched and lay it flat on a smooth surface. Remove the excess water by absorbent material and dry it at room temperature.

B-3.2.3 After drying, condition the test specimen to moisture equilibrium at room temperature. Place it on the glass plate, carefully remove all wrinkles and creases and place the other glass plate on the test specimen. Measure the distance between each pair of marks separately to the nearest millimeter.

B-3.3 Calculation

B-3.3.1 Calculate, separately, the percentage of dimensional change both in the direction of wales and in the direction of courses by the following formula:

$$S = \frac{100 \times (a - b)}{a}$$

where,

S = dimensional change, percent;

a = distance between a pair of marks (along the wales or courses direction as the case may be) before soaking; and

b = the distance between the same pair of marks after soaking.

B-3.3.2 Calculate separately the dimensional change between all the three pairs of marks in the direction of wales and in the direction of courses and calculate the average dimensional change in each direction.

B-4 DETERMINATION OF MASS PER SQUARE METER

B-4.1 Take a sports shirt/t-shirt from the test sample. Lay it flat on a table. Remove all creases and wrinkles by hand without distorting the specimen. Cut a test specimen measuring 20 cm × 20 cm from it in such a way that the two of its sides are parallel in the direction of wales and the other two parallel in the direction of courses.

B-4.2 After conditioning the test specimen to moisture equilibrium at room temperature, measure the weight of the specimen nearest to 0.01 g using a suitable balance.

B-4.3 Calculation

Calculate the mass per unit area of the specimen by the following formula:

$$M = \frac{W}{0.04}$$

Where,

M = mass in grams, per square meter of the specimen; and

W = weight in grams, of 20 cm × 20 cm specimen.

Similarly, determine the mass per unit area of at least four more test specimens and calculate the average of all the values obtained.

ANNEX C*(Foreword)***COMMITTEE COMPOSITION**

Hosiery Sectional Committee, TXD 10

<i>Organization</i>	<i>Representative(s)</i>
The South India Textile Research Association, Coimbatore	DR PRAKASH VASUDEVAN (Chairman) SHRI K. BALASUBRAMANIYAN (<i>Alternate</i>)
Apparel Export Promotion Council, Tirupur	DR K. RAJENDRAKUMAR
Caravel Knitwear, Tirupur	SHRI PALANYSAMY
Champion Knitting Company, Tirupur	SHRI R. RAMALINGAM
Chitralaya Banian Comany, Tirupur	SHRI T. R. VIJAYKUMAR SHRI S. N. KATHIR (<i>Alternate</i>)
Directorate General of Supplies & Addl. Disposals, New Delhi	DIRECTOR GENERAL (QA)
Essa Garments, Tirupur	SHRI DURGADEVI
Exlan Knitters, Tirupur	SHRI K. RAMASWAMY SHRI K. R. KUMAR (<i>Alternate</i>)
Facctum Wear, Tirupur	SHRI T. LAKSHMANAN
Fresh Knitting Company, Tirupur	SHRI K. ARUNACHALAM SHRI M. RAJA GOUNDER (<i>Alternate</i>)
Githanjali Knitting Mills, Tirupur	SHRI I. N. SHANMUGA KUMAR
Graso Garments, Tirupur	SMT. MEENAKSHI SUNDARAM
JKR Garments, Tirupur	SHRI JAILANI
Ministry of Defence (DGQA), New Delhi	SHRI ARVIND KAMTHANE SHRI J. K. YADAV (<i>Alternate</i>)
Ministry of Defence (DMSRDE), Kanpur	SHRI ASHOK YADAV SHRI MILANT PANT (<i>Alternate</i>)
Office of the development Commissioner, Small Scale Industries, (MSME), New Delhi	SHRI KULDEEP SINGH SHRI S. SURESH BABUJI (<i>Alternate</i>)
Office of Textile Commissioner, Mumbai	SHRI JAMIL AHMAD SHRI U. K. SHARMA (<i>Alternate</i>)
Oxo Apparels, Tirupur	SHRI G. SELVAKUMAR SHRI V. DANIEL RICHARD (<i>Alternate</i>)
P.V.S. Knittings, Tirupur	SHRI P. MURUGASAMY SHRI N. DEVAMANI (<i>Alternate</i>)
Pin Knitting Company, Tirupur	SHRI SIVA KUMAR SHRI S.SAMEUL SUDHAKARAN (<i>Alternate</i>)
Priya Hosieries, Tirupur	SHRI S. BALACHANDER SHRI V. DURAISAMY (<i>Alternate</i>)

<i>Organization</i>	<i>Representative(s)</i>
Ramu Hosieries Mills, Tirupur	SHRI M. TYAGRAJAN SHRI C. HARI (<i>Alternate</i>)
R.D. Knitwear, Tirupur	SHRI SIVASUBRAMANIAM
Santhi Knitters, Tirupur	SHRI S. RAJ KUMAR SHRI EASWARAMOORTHY (<i>Alternate</i>)
Southern India Mills' Association, Coimbatore	DR K. SELVARAJU SHRI D SURESH ANAND KUMAR (<i>Alternate</i>)
T.T. Limited, New Delhi	SHRI MANOJ TANDON SHRI SANJAY KUMAR JAIN (<i>Alternate</i>)
Textiles Committee, Mumbai	SHRI R. CHANDRAN SHRI S. PERIASAMI (<i>Alternate</i>)
The South India Hosiery Manufacturers' Association, Tirupur	SHRI EMPEROR PUNNUSWAMY SHRI V. GUNASEKARAN (<i>Alternate</i>)
Tirupur Exporters Association, Tirupur	SHRI G. KARTHIKEYAN SHRI P. VIDHYA PRAKASH (<i>Alternate</i>)
BIS Directorate General	SHRI A. K. BERA, SCIENTIST 'F' AND HEAD (TXD) [REPRESENTING DIRECTOR GENERAL (<i>Ex-officio</i>)]

Member Secretary

SHRI DHARMBEER
SCIENTIST 'C' (TXD), BIS

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